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Feeding Concentrates to Dairy Cows in Loose Housing

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When relatively low levels of concentrates are fed to the cows in loose housing, the concentrates can be metered to each individual animal according to production while they are in the milking parlor. However, high producing cows require a relatively high level of concentrates and are often unable to consume an adequate amount while in the parlor. Therefore, many dairymen are seeking better methods of feeding concentrates to high producing cows in loose housing systems.

The feed consumption of a dairy cow while in the parlor will depend on the time the cow is in the parlor, the type of feed, and how fast the cow eats. Some cows eat faster than others, but most cows can ordinarily consume from 7 to 8 pounds of feed while they are being milked. This can be increased by approximately 20% by pelleting the feed.

Some other possible methods for feeding additional concentrates in the lot are as follows:

1. A base amount of concentrates can be fed with the silage in the lot, and additional concentrates fed in the parlor according to individual production. As an example, Cow A needs 24 pounds and Cow B needs 16 pounds of concentrates per day; therefore, 10 pounds of concentrates per day per cow is fed with the silage. Cow A would receive an additional 7 pounds and Cow B an additional 3 pounds per milking while in the parlor.

This concept assumes that all cows receive an equal amount of concentrates that is mixed with the silage, which is probably not true. If dry cows run with the milking herd, the base amount of concentrates fed with the silage may be more than required for the dry cows.

Although some animals may receive more grain than is needed, this concept is easy to implement and has been used by many dairymen. It is probably most applicable to small herds and to housing arrangements where it is not economical to permanently separate the herd.

2. A base amount of concentrates can be fed in a feed bunk in the lot once or twice a day. The concentrates can be adjusted for production in the parlor as described in 1.

This practice would have the same limitations that were mentioned for the previous concept. Cows would not necessarily receive equal amounts of concentrates, some cows would receive more than needed, and possibly additional feed bunk space would be needed.

This practice does not appear to be highly practical although it could be used for a small herd.

3. The herd can be divided at feeding time. The high producing cows can then be fed a fairly large base quantity of concentrates and the low producers will receive little or none. The herd would run together at other times and the concentrates would be varied according to production in the parlor.
Dividing the herd eliminates part of the problem of feeding concentrates in the lot. When the herd is divided into two groups according to production level, the cows are more apt to get their equal share and there will be less over feeding of low producing animals. It is best to feed toward the higher producers and possibly over feed the lower producing cows.

This practice might be employed for small herds, but it would appear difficult and time consuming to divide a large herd each day. This system could be employed where the existing facilities would not economically permit the permanent division of the herd.

4. By dividing the herd into two groups according to production, different base levels of concentrate can be fed in the lot with the silage. The high producers will be fed more concentrate in the lot than the low producers, and the concentrates fed in the parlor will also be adjusted according to production.

If the housing facilities permit, this practice appears to be a very good method of feeding. Additional work will be involved and some additional equipment may be required to meter the concentrates and to feed different amounts to the two groups.

This practice appears to be most applicable to fairly large herds of 60 cows or more.

Since method four, which involves the division of the milking herd and the mixing and feeding of concentrates with silage, seems to provide the best control of consumption of concentrates, many dairymen are studying the possibility of utilizing this practice. This approach could be easily implemented on some farms, but it could be difficult and expensive to modify some installations.

The permanent division of the herd may require additional facilities and equipment. When the lot is divided, part of the herd may not have access to hay, water, and the milking parlor. The addition of a fence will complicate some of the cleaning problems and could hinder lot drainage.

Ordinarily the herd is split equally, but individual cows will occasionally be shifted from one group to another depending on production. As the group size varies, ideally the lot area would also vary. The use of an electric fence with temporary posts will permit some periodic changes in the size of the lot.

The following diagrams illustrate some of the common loose housing arrangements and some of the possibilities of dividing the lot. Some arrangements are not readily adaptable to the practice.
This arrangement was developed to divide the herds into two groups. Frequently during expansion a similar arrangement can be established.

Note two hay keepers are required.

The herd must be divided into two equal groups and cannot be varied.

Provisions to move both lots of cows to the parlor can easily be made.

Manure handling is not severely complicated by the division of the lot.

In a situation similar to this where the bunk runs along the front of the free stall barn, it is difficult to divide the lot without encountering several problems. The lot area for one group of cows is very small, and the cows do not have access to the hay.

In a new setup the feed bunk could be started approximately 10' from the lot fence and an overhead conveyor used to transfer feed to the bunk. This would allow passage of the cows around the end of the bunk near the silo which would increase lot area and in some cases provide access to the hay.
It is easier to divide the lot with the bunk running parallel to the alleys in the free stall barn. In some cases the lot area will not exactly be equally divided, but in many cases it will be satisfactory. It would be relatively easy to pave additional lot area for the one side if needed.

Provisions for hay must be made for the one side.

It could be difficult to move the cows to and from the parlor without intermingling of the cows.

Manure handling would not be severely hampered with a division of this lot.

The problems associated with this layout are very similar to those mentioned in Figure 2.

By the use of the overhead conveyor and moving the feed bunk away from the silo the cows would have access to the hay.

Manure handling would be more complicated by the division of the lot.
It is difficult to divide a lot of this type. Most of the problems previously mentioned would also be encountered in dividing this lot. However, it would be relatively simple, if expanding the herd, to create a layout similar to Figure 1.

This arrangement can be easily divided. Since the hay is stored in a loft above the free stalls, it can be easily fed in both lots in portable feeders.

Note that the division of the lot has little effect on manure handling and lot drainage.

There could be some difficulty in moving the animals to and from the milking parlor.